

WHAT IS CLAIMED IS:

1. An electronic component built-in module, comprising:
a pair of opposed circuit substrates, each of which includes a wiring
5 pattern and an insulating base material containing a resin;
an insulating layer that is placed between the pair of circuit
substrates and contains an inorganic filler and a resin composition containing
a thermosetting resin;
at least one electronic component that is embedded in the insulating
10 layer; and
an inner via that is provided in the insulating layer so as to make an
electrical connection between wiring patterns provided on different circuit
substrates,
wherein a glass transition temperature Tg1 of the resin composition
15 contained in the insulating layer and a glass transition temperature Tg2 of
the insulating base material included in each of the circuit substrates satisfy
a relationship $Tg1 > Tg2$.
2. The electronic component built-in module according to claim 1,
20 wherein a difference between the glass transition temperature Tg1
and the glass transition temperature Tg2 is at least 10°C.
3. The electronic component built-in module according to claim 1,
wherein a plurality of the insulating layers are provided.
- 25 4. The electronic component built-in module according to claim 1,
wherein the insulating layer contains the inorganic filler in an
amount of not less than 70% by weight and not more than 95% by weight.
- 30 5. The electronic component built-in module according to claim 1,
wherein the inorganic filler contains at least one selected from the
group consisting of: Al_2O_3 , MgO, BN, SiO_2 , SiC, Si_3N_4 , and AlN.
- 35 6. The electronic component built-in module according to claim 1,
wherein the thermosetting resin contains at least one selected from
the group consisting of: an epoxy resin, a phenol resin, and an isocyanate
resin.

7. The electronic component built-in module according to claim 1,
wherein the at least one electronic component comprises a
semiconductor bare chip.

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8. The electronic component built-in module according to claim 1,
wherein the inner via is formed from a conductive resin composition.

9. A method of manufacturing an electronic component built-in module,
10 comprising the steps of:

(a) preparing at least two circuit substrates, in each of which a wiring
pattern is formed on an insulating base material that contains a resin and
has a glass transition temperature Tg2, and mounting at least one electronic
component on at least one of the circuit substrates;

15 (b) forming a sheet-like material in which a through-hole is formed in
a predetermined region, using a mixture containing an inorganic filler and an
uncured resin composition that contains at least a thermosetting resin and
has a glass transition temperature Tg1;

(c) filling the through-hole with a conductive resin composition;

20 (d) placing the sheet-like material between the circuit substrates so
that a face of each of the at least one of the circuit substrates, on which the at
least one electronic component is mounted, is directed to a side of the
sheet-like material, and embedding the at least one electronic component
inside the sheet-like material by applying pressure in a thickness direction so
25 that the sheet-like material and the circuit substrates are formed into one
body; and

(e) forming an insulating layer by allowing the thermosetting resin
contained in the sheet-like material to be cured,

30 wherein the glass transition temperature Tg1 and the glass
transition temperature Tg2 satisfy a relationship $Tg1 > Tg2$.

10. The method according to claim 9,
wherein in the step (d), an electronic component built-in layer, in
which at least one electronic component is embedded in an insulating member
35 containing a resin composition having the glass transition temperature Tg1,
further is placed between the circuit substrates, and pressure is applied in the
thickness direction.

11. The method according to claim 9,
wherein in the step (d), at least two sheet-like materials, and an
electronic component built-in layer in which at least one electronic component
5 is embedded in an insulating member containing a resin composition having
the glass transition temperature Tg1, are placed between the circuit
substrates so that the sheet-like materials are in contact with the circuit
substrates, and pressure is applied in the thickness direction.

10 12. The method according to claim 10,
wherein a method of manufacturing the electronic component built-in
layer comprises the steps of:

forming a wiring pattern on one face of a mold release carrier, and
further mounting at least one electronic component thereon;

15 forming a sheet-like material in which a through-hole is formed in a
predetermined region, using a mixture containing an inorganic filler and an
uncured resin composition that contains at least a thermosetting resin and
has the glass transition temperature Tg1;

filling the through-hole with a conductive resin composition;

20 laminating the mold release carrier on the sheet-like material so that
the one face of the mold release carrier, on which the at least one electronic
component is mounted, is directed to a side of the sheet-like material, and
embedding the at least one electronic component inside the sheet-like
material by applying pressure in a lamination direction; and

25 peeling the mold release carrier from the sheet-like material.

13. The method according to claim 11,
wherein a method of manufacturing the electronic component built-in
layer comprises the steps of:

30 forming a wiring pattern on one face of a mold release carrier, and
further mounting at least one electronic component thereon;

forming a sheet-like material in which a through-hole is formed in a
predetermined region, using a mixture containing an inorganic filler and an
uncured resin composition that contains at least a thermosetting resin and
35 has the glass transition temperature Tg1;

filling the through-hole with a conductive resin composition;

laminating the mold release carrier on the sheet-like material so that

the one face of the mold release carrier, on which the at least one electronic component is mounted, is directed to a side of the sheet-like material, and embedding the at least one electronic component inside the sheet-like material by applying pressure in a lamination direction; and

5 peeling the mold release carrier from the sheet-like material.